

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : TOSHIBA CORP

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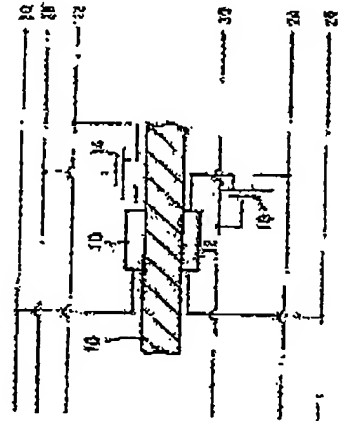
(72)Inventor : TSUDAI AKIHIKO
TOKAI YOICHI
SAKAI ISAO
SAHASHI MASASHI

(54) MAGNETIC MEMORY CELL AND MAGNETIC THIN FILM

(57)Abstract:

PURPOSE: To perform fast write and erasure and fast access of data by providing a heating circuit to heat magnetic thin film locally, and a readout circuit consisting of a magneto-resistant element whose resistance value is varied by the readout circuit and the magnitude of an applied magnetic field and a transfer gate.

CONSTITUTION: The magnetic thin film 18 is magnetized uniformly in a direction perpendicular to a film plane in an initial state. When the data is written, a signal is inputted to a lead wire 28, and a switching transistor 14 is energized. Thereby, a temperature at a part of the magnetic thin film 18 coming in contact with an exoergic element is increased by receiving heat from the element, and the coercive force and magnetic anisotropy of the heated part of the magnetic thin film are decreased, and the reversal of magnetization at the part occurs by the function of a demagnetizing field from neighboring magnetio thin film. Also, the erasure of the data is performed similarly, however, a write mode or an erasure mode can be selected by controlling heat input and heat input time. Also, the readout of written data is performed by energizing a transfer gate 16 and reading a resistance value between the lead wires 24 and 26.



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